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# Motivation for participation in city development

## A case study of Citizensourcing in Gothenburg, Sweden

Master's thesis in Management and Economics of Innovation

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ABSTRACT
During recent years, the topic of Smart Cities has become increasingly relevant. Cities all around the world are faced with the challenge of utilizing technology to improve and better the quality of life for their citizens. One aspect of Smart City development involves inviting citizens to participate in development of their cities, sometimes referred to as Citizensourcing. Citizensourcing essentially views citizens as both customers and users of public services and concerns how citizens can co-create value together with public administrations and governments. In order for Citizensourcing to be successful, governments have to be able to involve their citizens in Citizensourcing initiatives which leads to the question of how to motivate citizens to participate in such initiatives. In this study, we have studied the Citizensourcing platform Min Stad in Gothenburg using Herzberg's Hygiene Needs Theory and Vroom's Expectancy Theory to understand what motivates citizens to participate and what causes citizens to stop participating. Our results indicate that citizens are driven by both dissatisfiers and motivators, value feedback highly and are mostly interested in participating on city topics that are geographically close to home or within topics that interest them. In addition, we propose the introduction of a new framework based of Herzberg's Hygiene Needs Theory called "Citizensourcing Two-Factor Motivation" to study motivation in Citizensourcing settings. In this framework, we propose a replacement of Herzberg's so called dissatisfiers and motivators with the new terms "City Life Conditions" and "Citizenship Identity" to better understand what motivates citizens to participate in Citizensourcing initiatives. With this, we hope to encourage more studies in this field as well as getting a better understanding of how citizens can become more active in shaping their cities, and lives.

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Keywords: Smart City, Citizensourcing, motivation

# 1. Introduction

## 1.1 Background

This chapter will provide a background as well as an introduction establishing why this research is interesting and important. Firstly, a brief introduction to Smart Cities and Citizensourcing will be provided. Secondly, an introduction to motivation as a topic within Citizensourcing will be presented. Finally, the purpose and research questions of this report will be introduced.

### 1.1.1 Citizensourcing in Smart Cities

Throughout the last decade, becoming a Smart City has risen as an important challenge for cities and public administrations around the world. The interest in the transition to Smart Cities can be seen both in academic research, with the number of papers on the topic accelerating around 2010 (Dameri & Rosenthal-Sabroux, 2014), and also through the myriad of industry reports published on Smart City development such as Woetzel et al. (2018) or Deloitte (2015).

One of the most cited authors within the topic of Smart Cities, Giffinger, defines a Smart City as:

> "…a city well performing built on the 'smart' combination of endowments and activities of self-decisive, independent and aware citizens". (Giffinger & Gudrun, 2010)

The term Smart City is by definition complex in its nature as it incorporates many different aspects that have become increasingly relevant during recent years. Therefore, there is no universally established definition of exactly what Smart Cities are. In general, a Smart City revolves around using technology and data to improve efficiency of processes, improve existing services or innovating entirely new services and processes. Authors such as Green (2019) and Dameri & Rosenthal-Sabroux (2014) agree that technology is the most important aspect of a Smart City. However, it is important to note that Smart Cities is a broad term not limited to the use of ICT-technology to digitize a city. For instance, Dameri & Rosenthal-Sabroux (2014) emphasise that Smart City definitions include a wide range of areas including environmental, social and digital components. Additionally, both Green (2019) and Dameri & Rosenthal-Sabroux (2014) agree on the importance of social aspects of Smart Cities. According to Green (2019), technology itself can act as a valuable tool, however unintended consequences can appear when using a technology-driven approach to social changes. He further explains how Smart Cities often overemphasize the role of technology. Dameri & Rosenthal-Sabroux (2014) further add that human contribution is vital to incorporate the life of people into the smart actions that make up Smart Cities. Having this in mind, a growing field within Smart City research has been to understand how to effectively incorporate social aspects and bring citizens' perspectives into the complex questions of Smart Cities.

Benefits of Smart Cities include improving the quality of life of its citizens, nurturing a sustainable economic development and creating a more inclusive environment that allows for more citizen participation (Dameri & Rosenthal-Sabroux, 2014). These types of benefits have led to many cities, such as Gothenburg in Sweden, to adopt a digital agenda to transition to a Smart City. The city of Gothenburg (also referred to as Göteborgs Stad) highlights five key benefits of becoming a Smart City: "1) Simplifying everyday life for citizens, visitors and businesses, 2) Becoming a smarter and more open administration that supports innovation and participation, 3) Creating higher quality and efficiency in its functions, 4) Contributing to the city's brand and 5) To a larger extent use and optimize external financing to increase the pace of development and pre-requisites for innovation (Göteborgs Stad, 2020).

As exemplified by point 2) from Gothenburg's official homepage, one part of developing a Smart City is transitioning towards a more open government and a new type of public governance which view citizens not only as customers, but also as co-creators of public policy (Thapa et al., 2015). The transition toward a more open government has led to an introduction of the term "Citizensourcing", borrowed from the term "Crowdsourcing" often used in the private sector, to describe an act where public administration outsources a task traditionally performed by a public agent to an undefined group of individuals in an "open call" (Hilgers & Ihl, 2010). Successful Citizensourcing requires cities to adapt in order to allow citizens to become more involved and participate more actively in the development of a city when compared to traditional public administration. For Citizensourcing to function properly, enough citizens have to participate in co-creation and innovation activities which leaves the question, what motivates citizens to participate in Citizensourcing initiatives?

### 1.1.2 Motivation in Citizensourcing

Motivation in co-creation and innovation initiatives organized by public administrations is thus an increasingly relevant topic, particularly within the field of Citizensourcing as it is a fairly untouched area. Previous research within the field, for instance Schmidthuber et al. (2019), has applied traditional motivation theories such as self-determination theory (also referred to as SDT) to try to understand what motivates citizens to participate in Citizensourcing. However, these studies have not been sufficient enough to fully explain the driving forces behind citizens' motivations. Studies such as Schmidthuber et al. (2019) have explored the initial motivations behind citizens participation, but have also highlighted the need to further study what causes citizens to stay motivated over time. Previous research such as Wijnhoven et al. (2015) has also highlighted that cultural factors may play a role in what motivates citizens to participate, indicating that motivation factors may differ between cultures.

Therefore, this study will attempt to add to the existing knowledge on the subject by qualitatively studying what motivates citizens to participate in a case of Citizensourcing, more specifically, a digital platform called "Min Stad" (translated to My City) in the city of Gothenburg in Sweden. This platform was chosen as a suitable object to study for several reasons, including that the platform allows for voluntary participation on a wide range of topics and that the platform gives access to users over time, as it has been up and running since 2012. The fact that the platform allows for voluntary participation makes it interesting to study from a motivation perspective as participation is not driven by obligatory, rules based, participation or rewards. The theoretical framework used in this study is based on two motivation theories, Herzberg's Hygiene Needs Theory (Herzberg, 1987) and Vroom's Expectancy Theory (Vroom, 1964). These theories originate from work motivation in the corporate world but could prove useful in understanding motivation in a Citizensourcing setting. It is reasonable to expect some of the same aspects that motivates employees in a workplace environment to also be relevant in motivating citizens to participate in Citizensourcing initiatives such as Min Stad. Therefore, our study aims to initiate an adaptation of traditional motivation theory to a Citizensourcing setting and take the first step in this direction to better understand citizen motivation. In addition, these motivation theories provide additional perspectives on motivation which complements previous research that has used other motivation theories, such as SDT, within the field of Citizensourcing.

Furthermore, there is an increasing interest from the city of Gothenburg to engage its citizens in Citizensourcing activities. This makes this study both relevant from a theoretical perspective and beneficial to the city of Gothenburg and other cities as it hopefully provides value by aiding future management decisions on how to implement Citizensourcing activities that increases citizens' motivation to participate.

## 1.2 Purpose and research questions

The purpose of this paper is to study a Citizensourcing platform ("Min Stad") created by Göteborgs Stad in order to understand what motivated citizens to participate in Min Stad. By doing this, the study hopes to contribute to the field of Citizensourcing and Smart Cities by providing valuable insights on what motivates citizens to participate in Citizensourcing initiatives. Thus adding additional knowledge about the subject as well as aiding in future decisions regarding development of these types of initiatives.

Additionally, cities such as Gothenburg may also struggle to either attract enough citizens to participate, or potentially keep participation high without citizens losing interest over time. Therefore, another aim is to understand what causes citizens to stop participating in Citizensourcing projects to gain insights into how a public administration could go about motivating those citizens into staying active and participate over longer periods of time.

This study strives to answer the following research questions:

1. What motivates citizens to contribute to a Citizensourcing platform, such as Gothenburg's "Min Stad"?
2. What causes citizens to stop contributing to a Citizensourcing platform, such as Gothenburg's "Min Stad"?
3. How could the city of Gothenburg act to impact motivation and citizen engagement levels on Citizensourcing platforms, such as Gothenburg's "Min Stad"?

The paper will be structured into the following sections. In Chapter 2, previous work within the fields of motivation theory and Citizensourcing will be discussed in order to create a theoretical framework for the study. In Chapter 3, the method of the study will be described including the overall study design, data collection and data analysis methods. In Chapter 4, the results of the study will be presented. In Chapter 5, a discussion related to the results will be provided. Including a discussion of the theoretical contribution of this paper along with a proposed framework for Herzberg's Hygiene Needs Theory adapted to a Citizensourcing setting. In Chapter 6, some practical implications of this paper will be provided and finally, in Chapter 7, some limitations and potential avenues for further research are described.

# 2. Theory

In this chapter, the theory that forms the theoretical framework for this study is presented. To begin with, an introduction of Open Innovation and Citizensourcing is presented. This is followed by a presentation of motivation theories, more specifically, Herzberg's Hygiene Needs Theory (Herzberg, 1987) and Vroom's Expectancy Theory (Vroom, 1964). These motivation theories are then adapted and linked together with the subject of Citizensourcing. Lastly, the coding scheme developed for the analysis of this study is introduced.

## 2.1 Citizensourcing

Open Innovation essentially concerns encouraging and utilizing internal and external resources for innovation purposes (West & Gallagher, 2006). This term is often used to describe how private firms can use external resources such as customers, rivals or universities for innovation. By applying these principles to the public sector, one can speak about "Open Government". Open Government is described by Hilgers & Ihl (2010) as a way to integrate external actors for value creation in the governmental processes. It is described as a way to embrace more openness in terms of information and decision-making in order to improve the relationship between the government and the public. Closely related to Open Government is "Citizensourcing", which Hilgers & Ihl (2010) explain is a way to achieve participation and transparency in public sector organisations. Citizensourcing can be seen as a new type of relationship between the government and its citizens where citizens are encouraged to aid public value-creation through different types of Citizensourcing initiatives. Their definition of Citizensourcing is as follows:

> "...the act of taking a task that is traditionally performed by a designated public agent (usually a civil servant) and outsourcing it to an undefined, generally large group of people in the form of an open call." (Hilgers & Ihl, 2010)

Citizensourcing is a way of viewing citizens as both customers and users of public services. An important aspect is therefore to provide them with possibilities to contribute with complaints and suggestions to improve these services (Hilgers & Ihl, 2010). Hilgers & Ihl (2010) propose a framework that categorizes Citizensourcing along three dimensions: 1) *Citizen Ideation and Innovation*, leveraging the citizens' creativity and knowledge through methods such as idea and innovation contest through open innovation platforms, 2) *Collaborative Administration*, integrating the citizens to enhance existing public administrative processes and 3) Collaborative Democracy, collaborating to improve public participation within public policy processes.

When it comes to previous work on what motivates citizens to participate in Citizensourcing, Thapa et al. (2015) explain that in order to increase citizen involvement, the designing of Citizensourcing initiatives has to be tailored to the task and target group due to the diversity of motivations. By tailoring the task to the right target group, Thapa et al. (2015) mean that citizen involvement can lead to a boost in innovation in the public sector. Another interesting finding of theirs was that citizens' willingness to participate increased with the level of expertise. Furthermore, Schmidthuber et al. (2019) analyzed why citizens participate in open government projects from the perspective of self-determination theory. Their study found some quantitative support that intrinsic motivation (such as the feeling of fun and enjoyment) boosted participation quality. In addition, results from this study indicated that individuals that are motivated by external pressure or rewards share fewer ideas although they may evaluate more ideas by pressing like or dislike. However, the report also highlights the need for further research on the topic as they have a rather large unexplained variance in their results. Additionally, they emphasise that factors such as cultural differences and previous governmental attempts to communicate with the citizens could influence the results. Another study from Schmidthuber et al. (2017) analysed determinants of citizens participation through the perspective of a Technology Acceptance Model (TAM), Intrinsic and Extrinsic motivation and Theory of Planned behavior. This study found that the perceived ease of use of a Citizensourcing platform had no significant impact on participation while the perceived usefulness did. Similarly to Schmidthuber et al. (2019), this study also found that fun and enjoyment were important motivators. In addition, the study also found that participants with experience from traditional reporting had higher activity on the online reporting platform. This study also highlighted the need to further study, not solely what causes citizens to participate initially, but also what causes citizens to keep engaging over time.

Therefore, this study attempts to add to existing research by exploring a Citizensourcing platform by using classical motivation theories. In addition, the study will also provide new insights by studying what causes citizens to stop contributing to a project. The motivation theories Herzberg's Hygiene Needs Theory (Herzberg, 1987) and Vroom's Expectancy Theory (Vroom, 1964) are used to analyse the motivation of citizens as they are both well cited and widely accepted when it comes to work motivation. The following chapter will therefore explain these theories on a general level and tie everything together with Citizensourcing in the case of Min Stad.

## 2.3 Theoretical framework

Motivation theories help us understand why people act and behave in different ways. It is however important to bear in mind that most motivation theories originate from work motivation and how to motivate employees (Shani et al., 2009). Previous studies, such as Robinson et al. (2016) highlights that motivation studies within digital space is rather uncommon, however some previous work using motivation theories within a Citizensourcing setting exist. In our study, Herzberg's Hygiene Needs Theory (Herzberg, 1987) and Vroom's Expectancy Theory (Vroom, 1964) are used to develop a coding scheme that is used as a framework for analysing citizens motivations to participate on Min Stad.

### 2.3.1 Herzberg's Motivation – Hygiene Needs Theory

Frederick Herzberg identified that people had two types of major needs (Herzberg, 1987). The first type of need is "hygienic needs", which essentially concerns the physical and psychological conditions where people work. Shani et al. (2009) explain that hygiene needs, according to Herzberg, were to be satisfied by hygiene factors or dissatisfiers. Dissatisfiers could be working conditions, company policy, relationship with supervisors etc. The name dissatisfiers comes from the rationale that employees expect these factors to be good. However, they will never be truly motivated if these factors are better than good.

The second type of needs is "motivator needs", which are the needs that really make people want to work. These motivator needs include factors such as recognition, the nature of the work and responsibility and are described by Herzberg to be similar to the higher needs in Maslow's Hierarchy of Needs (Maslow, 1958). These are the factors that contribute to job satisfaction. This theory is called Herzberg's Two Factor Theory, sometimes also referred to as Herzberg's Hygiene Needs Theory. According to Herzberg (1987), the opposite of job satisfaction is not job dissatisfaction, it is no job satisfaction. Similarly, the opposite of job dissatisfaction is not job satisfaction, but rather no job dissatisfaction. Herzberg (1987) states that people tend to see satisfaction and dissatisfaction as opposites, however, when it comes to understanding human behaviour, these are caused by two different human needs.

### 2.3.2 Vroom's Expectancy - Valence Motivation Theory

Vroom (1964) described how motivation can be explained as a function of three factors, Expectancy, Valence and Instrumentality. According to Vroom's theory, the three factors can be used to determine how much effort an individual will put into a task. The theory is based on an assumption that individuals weigh costs and benefits, consider alternatives and take action based on what action yields the highest utility.

The first factor, Expectancy, can be described as the individual's perceived probability that a certain level of effort will lead to a desired performance (Shani et. al, 2009). In previous research, the perceived relation or correlation between action and outcome has also been measured as Expectancy (Van Eerde & Thierry, 1996). The second factor, Instrumentality, can be described as the individual's perceived probability that the performance achieved will lead to a desired outcome (Shani et. al, 2009). Because a certain level of performance could have several potential outcomes, Vroom (1964) states that the number of outcomes should be weighted by Valence and summed. In practice this part has received some criticism due to difficulties in measuring Instrumentality because most researches select the outcomes that are later presented to the subject for rating (Van Eerde & Thierry, 1996). This can potentially cause issues as outcomes may be of a type that the subject did actually not consider yet, thus causing the researcher to impact the subjects motivation just by studying it. The final factor, Valence, can be described as the perceived value of the projected outcomes (Shani et. al, 2009). This is generally interpreted in previous research as the importance, attractiveness, desirability or anticipated satisfaction of an outcome (Van Eerde & Thierry, 1996).

Although this theory has received much attention in the study of motivation of work, critics argue that the model is too complex and that key elements are subject to interpretation and definition issues (Shani et. al, 2009). Previous studies, such as Van Eerde & Thierry (1996) have shown that different researchers disagree on what the key components mean and how to measure them. Despite the criticism against Vroom's model, the theory has led to multiple new theories that have been developed upon the Expectancy Theory, for instance SDT (Self Determination Theory) (Gagné, 2005) or Porter and Lawler's (1968) model of Intrinsic and Extrinsic work motivation. However, Van Eerde & Thierry (1996) suggest using the Valence, Instrumentality and Expectancy components rather than the developed models.

### 2.3.3 Linking Citizensourcing together with Herzberg's Hygiene Needs Theory and Vroom's Expectancy Theory

In the case of Gothenburg's digital platform Min Stad, the motivation theories mentioned above have been adapted and interpreted accordingly. Firstly, as Herzberg's Hygiene Needs Theory (Herzberg, 1987) originates from work motivation and was developed to understand the motivation to work, some aspects of it would be less relevant than others. For instance, dissatisfiers such as "salary", "company policy" and "supervision" that are relevant factors for motivation of employees, are most likely not directly applicable for what motivates citizens in a city. However, other dissatisfiers such as "safety" and "work condition" are more directly applicable in a Citizensourcing setting. Safety can be referred to as the safety in the city and includes factors that cause people to feel safe. An example would be when a citizen choses to report on the platform because a broken street causes an alley to feel dark and unsafe or when a bicycle lane has a sharp bend that ends in a highly trafficked car lane. Work conditions could refer to general conditions in the city environment that bother citizens but do not pose a direct question of safety. This could be when a traffic light is irritatingly slow and causes a citizen to spend a couple of minutes extra every day on the way to work. When it comes to the dissatisfiers that are not directly applicable, these could be adapted to better fit in a Citizensourcing setting. Salary could be replaced with “city tax rates and fees”, as the city (or municipality) tax rate is usually determined by the city (or the governing politicians) and also has a direct effect on disposable income in the same way that salary does. An example of this would be when road tolls or congestion fees that are higher than other cities cause a citizen to come on to a Citizensourcing platform to complain about this. Company policy could be replaced with “city rules and regulations”, meaning that citizens care that these are fair, clear and in line with other cities the same way that employees care about that for company policy. An example of this would be that citizens could be dissatisfied and comment on how long bars can stay open at night or how long cars can stay idling in the city.

In terms of Herzberg’s Hygiene Needs Theory (Herzberg, 1987) in a Citizensourcing setting the motivators are mainly “achievement”, “recognition”, “challenge” and “the work itself”. Achievement refers to people getting a feeling of accomplishment, which is different from recognition that refers to people feeling being recognized for their contribution. In the case of Min Stad, a participant motivated by recognition could choose to contribute to the platform because the person expects his/her ideas to gain praise and be recognized as a good citizen by other citizens or city officials. Challenge refers to citizens finding the task being a challenge to them. An example of this could be when a citizen feels that developing ideas for public transportation and getting his/her suggestions good enough to be implemented is a challenging and rewarding task. Finally, the work itself refers to citizens finding the actual work being fulfilling. A citizen that is motivated by the work itself might find enjoyment just exploring the city through a 3D map and adding suggestions for fun. In general, these motivators could be closely linked to the feeling of fun and enjoyment highlighted by previous studies within the field of Citizensourcing as an important factor for what causes citizens to contribute.

InTable 1 below a summary of the dissatisfiers and motivators is presented. This table provides the framework used when developing the coding scheme.

| **Type** | **Name** | **Description** |
|---|---|---|
| Dissatisfier | Safety | Factors that directly affect the |

| | | |
|---|---|---|
| | | feeling of safety among citizens. |
| Dissatisfier | Work conditions | Factors in the city environment that are not directly related to safety. |
| Dissatisfier | City tax rates and fees | Tax rates, fees or other factors that impact the citizens disposable income. |
| Dissatisfier | City rules and regulations | Factors that impact how rules and regulations within the city are perceived by citizens. |
| Motivator | Achievement | Factors that provide citizens with a sense of achievement. |
| Motivator | Recognition | Factors that provide citizens with a sense of being recognized for their work. |
| Motivator | The work itself | Factors that make citizens feel encouraged and find it interesting to post. |
| Motivator | Challenge | Factors that act as a challenge for the citizens to be stimulated. |

Table 1. Descriptions of Herzberg's Hygiene Needs Theory adapted to a Citizensourcing setting

Just as with Herzberg's Hygiene Needs Theory (Herzberg, 1987), Vroom's Expectancy Theory (Vroom, 1964) is also adapted to a Citizensourcing context. As Vroom (1964) highlights, it is important to note that citizens can have multiple expected outcomes that impact their motivation and how much effort they will put into sharing on the platform. For example, a citizen that has reported a broken street light that makes a local alley feel unsafe, might both expect the problem to be fixed, but also that other neighbours in the local community show their support on the suggestion. Expectancy can be exemplified with factors causing people to feel that posting something requires too much effort or that the platform does not allow them to express themselves properly no matter how much they try. Instrumentality could in the case of Min Stad be factors causing citizens to feel that no matter how good contributions they make on the platform, these contributions will never reach the desired outcome. For example citizens might feel that nobody cares or replies to their posts anyway or that no suggestions ever get implemented through this platform. Lastly, Valence can be exemplified as citizens not caring about what happens to their posts, and them viewing it as a way of getting it out of their mind. Table 2 below provides a summary on the three factors of Vroom's (1964) factors adapted to a Citizensourcing setting.

| **Type** | **Description** |
|---|---|
| Expectancy | The individual's perceived probability that a certain level of effort will lead to a desired performance. |
| Instrumentality | The individual's perceived probability that the performance achieved will lead to a desired outcome. |
| Valence | The individual's perceived value of the projected outcome. |

Table 2. Descriptions of Vroom's Expectancy Theory adapted to a Citizensourcing setting.

To summarize, some previous research exists on the topic of how to motivate citizens to participate in Citizensourcing initiatives. However, these studies also showed that the motivation theories used in those studies do not fully explain the underlying motivations of citizens. Therefore, this study aims to add to existing literature by exploring two classic theories of work motivation in a Citizensourcing setting. In addition, previous studies have also highlighted the need to study what causes citizens to stay motivated over time, and not only the initial motivations for participating. Therefore, this study will also attempt to understand what causes citizens to stop contributing using these theories.

# 3. Method

The purpose of this study was to understand what motivated citizens to contribute to Citizensourcing initiatives. Therefore, a single case study based approach was deemed most appropriate to allow in depth exploration of the underlying motivations of the citizens (Yin, 2018).

## 3.1 Case study

“Min Stad” (translated to English: My City) originates from a website created by the city of Gothenburg in 2012, which was later also launched as a mobile application. The application serves multiple purposes in the eyes of the city. Firstly, citizens can suggest ideas on things that need to improve within the city and tag them with a specific subject on a specific location. Secondly, the application can be used by the city to visually share information on various city development or infrastructure projects that are going on or are planned around the city. Thirdly, both users and the city can use the application to share stories or history behind specific geographic locations within the city. Central to the interface of the application, and website, is a 3D-map over the city where users can explore all posts that other users or the city have posted throughout the city, in addition to putting their own contributions on the map. A post, or contribution, is generally a short text comment such as “this traffic light is broken” or “rebuild this city area to a large park” . Sometimes posts are tagged with a specific theme such as “public transportation” or “leisure”, and occasionally with an included picture. In terms of the three Citizensourcing dimensions identified by Hilgers & Ihl (2010), Min Stad could be described as mostly about Collaborative Administration, as citizens can collaborate by reporting on issues in the city and thus enhancing the quality of data for the city on where to focus its resources. However, it also has some aspects of Citizen Ideation and Innovation as citizens can provide suggestions and ideas for improvements within the city that are of a more creative nature.

Min Stad was chosen as the basis for theoretical sampling as it is a good case to study motivation in a Citizensourcing context. Firstly, the application allows users to post ideas on how to improve the city, but also stories where the user may only be looking to share something interesting with others. This is relevant from a theoretical perspective because it means that users could have a wide range of motivations for contributing on the platform. Secondly, the application targets the entire population of Gothenburg, and is not limited to a specific subject such as, for instance, traffic issues. This means that the theoretical framework and results of this study may be applicable across a wide array of other Citizensourcing initiatives. Thirdly, the platform has a significant amount of contributions, with a total of over 1400 posts from citizens, proving that the application is actually used by citizens. Finally, the application has been around since 2012, although partly only in form of a website. This is important to answer the second research question, why citizens stop contributing to Citizensourcing platforms, by having access to individuals that may have contributed in the past but have now stopped contributing. These factors contribute to Min Stad being very interesting from a Citizensourcing perspective. This, combined with the interest from the city of Gothenburg to understand the underlying motivations of participants, makes Min Stad an ideal platform for this study.

## 3.2 Data collection

The data collection for this study consisted of data from three main sources. Firstly, interviews were conducted with both users of the platform and staff from Göteborgs Stad who had worked on Min Stad. Secondly, activity of the users on the platform such as how many posts were admitted over time was studied. Finally, other relevant documents and websites relating to Min Stad and Göteborgs Stad's work with other Citizensourcing platforms were reviewed. Each of these data sources will be described in more detail in the following section.

### 3.2.1 Interviews with users

The primary data source was interviews with users of the application Min Stad. Interview subjects were selected from individuals that had contributed to the platform by submitting suggestions using their Facebook profiles. As all suggestions on Min Stad require a Facebook profile, most participants were available for messaging through the Facebook platform. A few participants were however unreachable, as they had either removed the Facebook profile used when publishing the post or had their profile closed from messaging. Participants were contacted from a reverse chronological order, meaning that interviewees that had posted more recently were contacted first. In total, 52 potential interviewees were contacted, which equals all participants that had posted from 2017 except 7 that were unreachable due to factors described above. Participants who had not posted anything since before 2017 were not contacted as it was assumed that these subjects would not remember enough of their motivations to provide valuable data. Out of the 52 contacted, 37 did not respond, 4 declined to be interviewed and 11 were finally interviewed. Moreover, all interviewees in this study have been anonymised in order to protect each individual's personal integrity. This means that all the names mentioned in the results and discussion chapter are pseudonyms and thus not the real names of the interviewees.

The interviews with users were conducted using a semi structured approach with an interview protocol intended to last roughly 30 minutes. The protocol was structured into two main parts, the first part focusing on motivation behind using the app in general and the second part focusing on motivation behind a specific post. The motivation theories introduced in the literature chapter were used as a foundation to formulate questions exploring the underlying motivations of the participants. All communication with study participants, including interviews, were conducted remotely either through telephone or digital video conference tools. The interviews were all conducted in Swedish and later transcribed.

### 3.2.2 Interviews with staff at Göteborgs stad

In addition to the interview data collected from users of the platform described above, conversation-like interviews were conducted with staff at the city of Gothenburg that had worked with the platform. The purpose of these interviews was to get a better understanding of the background of the platform, along with the city's perspective on what the purpose of the platform was. In total, three interviews were conducted with staff that had worked with, or close to, Min Stad. The interviews ranged between 40 - 60 minutes and were conducted remotely through digital conferencing tools and in Swedish. Because the purpose of these interviews were to gain background information and understanding of the general purpose of Min Stad, these interviews were not transcribed.

### 3.2.3 Data on activity on the platform

Data was also retrieved on the usage of the platform, including details on the number of contributions to the platform, along with information on which geographical areas users commonly posted in. The purpose of retrieving this data was to gain an understanding of the activity on the platform and how that had developed over time. As the second research question relates to why users stop contributing to a platform such as this one, it was important to understand whether the application was successful in retaining users over time or if activity was stagnant or declining. In addition, reviewing individual posts on the platform served as a way to gain understanding on both what users commonly posted or discussed on the platform, but also for a high level of understanding in which locations these posts were more or less common.

### 3.2.4 Documents and websites related to Min Stad

To complement the interviews and data on activity on the platform, a number of documents and websites related to Min Stad and Göteborg Stad's related work on Smart City development in general and Citizensourcing in particular were reviewed. The purpose of reviewing these sources was to gain a deeper understanding of the purpose and goals of Min Stad and other Smart City initiatives in the eyes of the city. Public documents regarding Göteborg Stad's Smart City development in general (Göteborgs Stad, 2020) along with documents from the EU project IRIS

(Integrated and Replicable solutions for co-creation in Sustainable Cities) were reviewed (IRIS Smart Cities, 2020). In addition, more application specific documents such as opinions from the city council on guidelines for the similar Citizensourcing service within Göteborgs Stad called "Göteborgsförslaget" was also reviewed (Göteborgs Stad kommunstyrelsen, 2019).

## 3.3 Data analysis

All interviews with the users were recorded and transcribed. To ensure a robust analysis, the transcripts were analyzed using a coding process based on Units of Analysis similar to the one proposed by Campbell et al. (2013). Using this method means identifying portions of text to be coded, called Units of Analysis, that capture the meaning and context of what a respondent says (Campell et al., 2013). An example of a Unit of Analysis would be if an interviewee says that: "I engaged on the platform because I was concerned with the safety of my area.". This sentence in its entirety, or a part of it, could then be identified as a Unit of Analysis and coded as related to safety. A high level overview of the process can be seen in Figure 1 below. This method was used in order to minimize issues that can arise when the Units of Analysis are not naturally given and thus require the subjective interpretation of the coder, sometimes referred to as issues of Unitization (Krippendorff, 1995). For instance, a Unitization issue could arise when two independent coders want to use the same code for a specific paragraph or sentence, but their defined strings of text to analyse may not be exactly the same (Campell et al., 2013). One coder may, for instance, include a sentence of background for the statement when the other coder does not. This would then lead to low intercoder reliability although the authors actually mean the same thing but express it slightly differently.

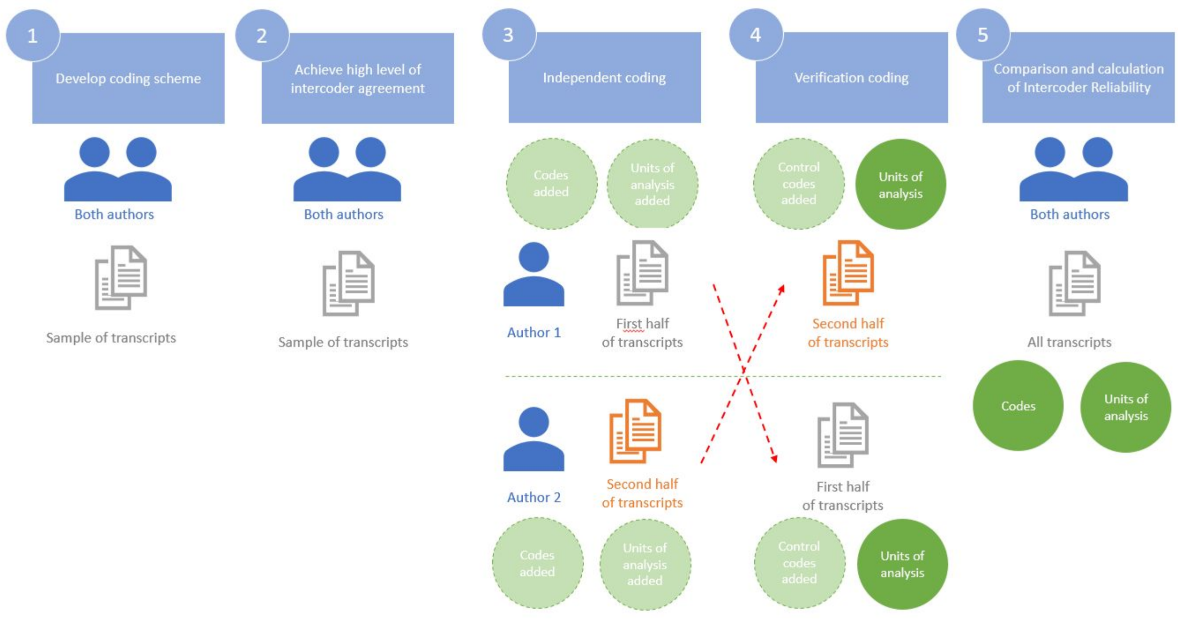


Figure 1. Overview of the coding process used in this study.

Firstly, a high level coding scheme was developed by both authors together coding a sample of two transcripts. The basis for the initial coding scheme was developed using the two motivation theories, Herzberg's Hygiene Needs Theory (Herzberg, 1987) and Vroom's Expectancy Theory (Vroom, 1964) adapted to a Citizensourcing setting. A set of questions were formulated to aid the understanding of the underlying motivations. These questions constituted the foundation for the interview questions. Firstly, to answer what motivates citizens to participate, the following questions were developed:

1. How did they discover the platform?
2. Did they contribute due to dissatisfiers or motivators?
3. What was their perceived purpose of Min Stad?
4. Why did they post that specific post?

Secondly, in terms of understanding why people stop contributing, an analysis of the platform activity was made, combined with these questions to understand why people stop contributing:

5. What was their expected outcome of the post?
6. What factors caused them to post more or stop posting?

This initial coding scheme was further developed by adding examples and more details throughout the entire coding process as suggested by Campbell et al. (2013). Secondly, the authors attempted to settle rules for any codes that were more open to interpretation in order to achieve a high level of Intercoder Agreement. Intercoder Agreement meaning settling any remaining disagreements on how to code a specific unit of text (Garrison et al, 2006). Thirdly, the first author independently defined Units of Analysis and coded half of the remaining transcripts using the coding scheme. While the second author, independently, did the same for the other half. Once all transcripts had been coded by one author, the transcripts that were coded by the first author were transferred to the second author, together with the Units of Analysis but without the codes relating to each Unit of Analysis. The second author then coded the exact same Units of Analysis as the first author on transcripts that were initially coded by the first author. The same process followed for the transcripts that were initially coded by the second author. In addition, if the first author found a Unit of Analysis relevant (that was not coded by the second author), the second author was informed about this and had to code this before proceeding to the next step. By doing this, the risk of missing an interesting Unit of Analysis was mitigated. Finally, the authors compared coding on each transcript to calculate Intercoder Reliability and discussed any differences to reach Intercoder Agreement. In total, 122 Units of Ànalysis were identified across the 11 interviews.

### 3.3.1 Intercoder reliability

To calculate Intercoder Reliability, the proportion agreement method was used (Morrissey, 1974). This method simply calculates the number of coding agreements divided by the total number of both agreements and disagreements and does not, in comparison to the commonly used Krippendorff alpha (Krippendorff, 2018), take into account that coders may sometimes agree by chance. However, using the Krippendorff alpha was inappropriate to use in this case as it assumes that all codes have equal probability of being used (Campbell et al., 2013), which was not the case in this study. The overall level of Intercoder Reliability was 92 percent and Intercoder Agreement 100 percent. Indicating a high level of consistency between both coders.

# 4. Results

This section will describe the main results and insights of the study. Firstly, findings from studying the platform and the activity on it, together with findings from the conversations with staff behind the platform will be presented. Secondly, a presentation of findings from the interviews on what motivated citizens to participate on the platform will be shown. Finally, findings from the interviews on what caused citizens to stop returning to the platform will be presented. Quotes from the interviews with participants will be used throughout this section to illustrate some of the findings. As mentioned in the method chapter, all names used for interviewees in this chapter are pseudonyms and thus not the real names of the interviewees.

## 4.1) Min Stad in the perspective of the city

### 4.1.1 Declining activity on the platform

Figure 2 below shows the number of posts or contributions that have been made on the platform each year since the launch in 2012. As can be seen in the graph, the number of posts have been steadily declining, with the exception of a spike in 2016, up until 2018 when it appears to have bottomed around low levels.

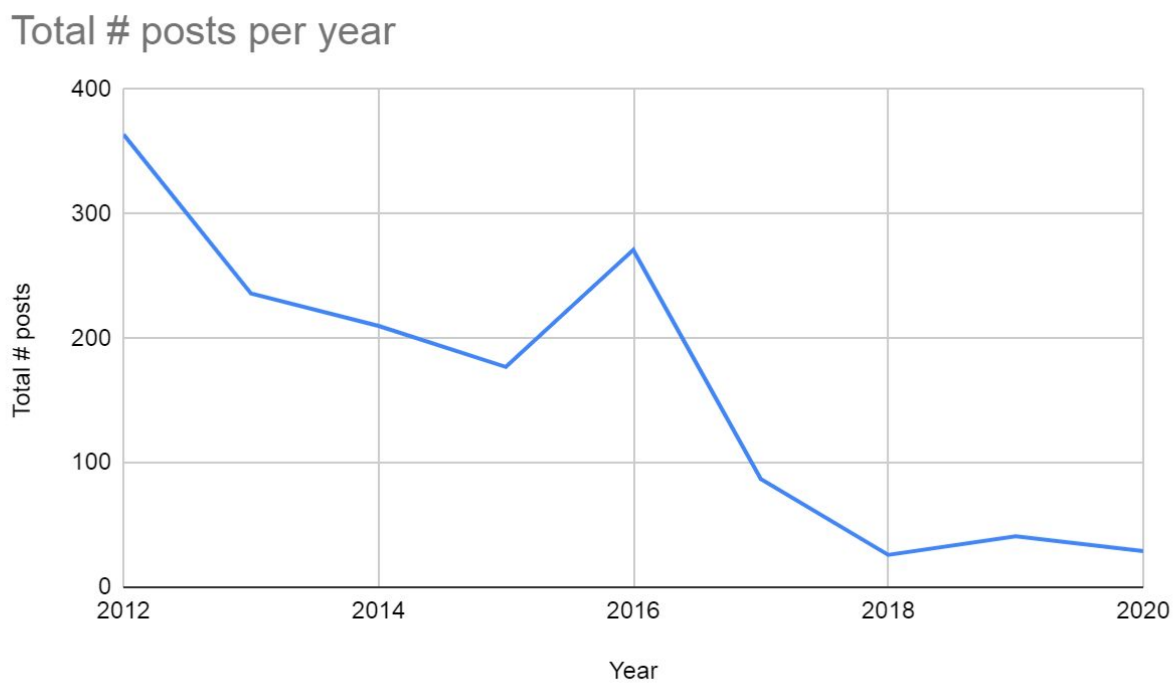


Figure 2. Total number of posts per year on Min Stad since launch in 2012.

#### 4.1.2 Not a dialogue tool between citizens and the city

During conversations with staff at the city of Gothenburg, the staff described that they believed the most common reason citizens came on to the platform was to complain about issues. For example that a crossroad felt dangerous or that something was faulty in the city. One of the staff members working with the platform also described that sometimes suggestions of a creative kind were posted, however these posts were assumed to come from people who had a specific interest in city development and architecture. In terms of the purpose of the platform, one staff member described the platform as a graffiti board where citizens could interact and discuss issues without the city interfering. Another representative described how the platform initially was thought of as a way for citizens to make error reports and have more dialogue with the city but that they had to move away from that due to legal reasons. The main legal reason being that all suggestions would require a specific administrator and case number and go through the appropriate, formal processes which would in turn require a unsustainable amount of resources. In summary, the purpose of the platform from the representatives of the city was described as a way for the city to inform about city development and for citizens to discuss issues with each other without the city interfering, rather than a dialogue tool between citizens and the city.

### 4.2) Understanding the motivations behind contributing to Min Stad

#### 4.2.1 Citizens discovered Min Stad primarily through government channels or friends and family

To understand the initial motivations of the participants, it could be relevant to understand how they first discovered the platform. The most common ways in which participants discovered the platform was either through government information channels, such as Göteborgs Stad's website or public advertisements, or through friends and family members that informed them about Min Stad. Others discovered the platform through social media, work or through the news.

#### 4.2.2 Bothered by the city environment and/or motivated by recognition from others

Initially, the participants that were driven by a dissatisfier(s), motivator(s), or both, were divided into different categories. According to our study, participants were most commonly driven by both a dissatisfier and a motivator. This could for instance be where one participant was dissatisfied with safety while simultaneously wanting recognition for his contribution. One participant described how, "A post that concerns a dark tunnel that feels unsafe." followed by "...hopefully being able to contribute somehow, and that maybe somebody sees it and takes it further." (Lucas Ekerot). Some participants also described that although their initial motivation to come on to the platform might have been driven by a dissatisfier such as complaining about something in the city environment, they also found the platform to be a fun and clever way to discover and explore the city by looking at what other citizens posted about. For instance, one participant mentioned, “That is what is good about this thing, it is the visualisation that is the general strength of this application right? That I can immediately find my way to, both where I thought about putting my own suggestion, but also relating to other people’s suggestions geographically. I thought that was very good.” (Axel Valdemarsdotter).

The most common motivator was that participants were driven by some sort of recognition for their contribution. An example of this would be that a participant could be recognized by neighbors as an active contributor to the local society or that someone else thought that the suggestion was a good one. For instance, one participant described the following about her motivations, “...by getting more life and movement going in this location I would feel more safe. So it would affect me positively and I would be happy that someone else thought it was a good suggestion.” (Camilla Björnberg). Another motivator was that some participants were driven by finding the work itself interesting or enjoyable. For instance, one participant mentioned that he had a great interest in city planning and infrastructure solutions and found enjoyment in researching and creating a detailed proposal for how a new tram stop could add value to a specific location in Gothenburg.

In terms of dissatisfiers, the most common dissatisfier was classified as “work conditions". This included all topics where participants made a post because something in the city environment (the work environment) bothered them. Examples of this were reporting on traffic lights turning green too slowly or a bicycle renting service that had its rental stations in non-optimal locations. As one participant put it when asked why he made his post, “I made my post about a traffic light for bicycles that was very slow. It took too long before it became green.” (Rickard Knutsson). The other common dissatisfier that motivated participants to contribute to the platform related to safety. Some examples of this were a tunnel that felt dark and unsafe at night or a poorly light area that made walking there at nighttime feel unsafe.

#### 4.2.3 Citizens perceived Min Stad as a way to communicate directly with Göteborg’s Stad

To understand the expectations and underlying motivations of the participants, understanding their perceived purpose of the platform is important. Different participants had different views on what the purpose of the platform actually was and therefore also their expectations of it.

The most common perceived purpose of the platform, from the interviewees perspective, was as a way for citizens to communicate directly with Göteborgs Stad. This meant that the participants expected the platform to be a means of communication where citizens could reach Göteborgs Stad, or a specific administration such as the traffic department, directly. Examples of this from the interviews with citizens include, “I mean, when a public institution receives a message in any way, even electronically, they are required to register that and respond to it in some way.” (Pelle

Adolfsson) or “It [my post] was only directed at Göteborgs Stad so to speak. Who would receive it I do not know. If they have some system for that.” (Carl Linusson).

Several participants also perceived the platform to have an additional purpose besides communicating directly with Göteborgs Stad, which was communicating with other citizens. These participants mentioned that they also viewed the platform as a way of communicating with other citizens about suggestions in the city. For instance, “Primarily I wanted other people living in Lövgärdet to see it. Not that some politician saw what one person in Lövgärdet thought.” (Måns Zvanberg). This indicated that although many of the participants believed the main purpose was to communicate with the city, several citizens also perceived communication with other citizens as an additional value added from the platform.

Finally, several participants also mentioned that the purpose of the platform felt unclear and that they did not know exactly what to expect. Some of these mentioned that they felt this from the start while others mentioned that they initially thought the purpose was to communicate with Göteborgs Stad, but then changed their mind after they had used the platform. An example of this would be, “That kind of social engagement [that you get in local community Facebook groups] is a communication platform, this is not a communication platform. This is a…. well, I don’t know what this is.” (Axel Valdemarsdotter).

#### 4.2.4 Citizens are motivated to participate in discussions that are close to home…

Another interesting aspect is to understand why participants chose to post about their specific topic. Therefore, participants were also asked to describe why they posted about a specific topic or in a specific location. Almost all participants mentioned that their post was related to something that was either close to their home or close to/on the way to work. Examples of this include, “But I have also felt a great need to say something about my living environment…” (Camilla Björnberg) and “It was the biking route from my apartment to work, I had to bike on a foot road where bikes were forbidden… otherwise I had to bike on a big road with lots of traffic and several hundred meters extra just to get to work.” (Anton Axelsson). In addition to making their own posts and suggestions close to home, another interesting aspect mentioned by some interviewees was that they did not care about things that happen all over the city, but wanted to keep a close eye on what went on in their local neighbourhood in terms of what other citizens were suggesting. For instance, one interviewee described the following on what would make the application more useful and attractive for him, “Small subtle ways, yeah I see that your neighbor is also on Min Stad. He has made a post here, would you like to look at that suggestion? That would create a sense of presence, I mean feedback and presence.” (Axel Valdemarsdotter).

#### 4.2.5 ...and/or on issues that relate to a personal interest or hobby

Almost half of the participants also mentioned that the specific topic that they posted about was related to a personal interest or hobby of some sort, with the most common being a personal interest in city planning. Examples of these include, “Then when it comes to the other suggestion about the pavilions, that is really an interest I have about city planning when it comes to architecture and so on.” (Carl Linusson) or “I have always had an interest in city planning.” (Måns Zvanberg). These results further add to show that citizens may not be interested in everything that goes on in Min Stad, but want to participate in the discussion on certain specific topics. For example, one participant described, “...play is it, the category that I [my post] is under. Then I should receive an email every time there is a ‘play suggestion’ in my part of the city. So I should know that because there is a risk that I am interested in that specific part.” (Axel Valdemarsdotter). In summary, our results indicate that citizens are more motivated to contribute or come back to the parts of the platform that relate to their home or workplace environment, and on topics that are related to specific interests of theirs.

Finally, an interesting finding was that citizens that contributed due to interest were sometimes working with related questions in their profession. For instance, “I am pretty engaged in technology and environment, and hydrogen gas, I work at AB Volvo with vehicles so it’s close to my heart.” (Mats Wahlberg) and “I’ve been working as a researcher at RISE for two years with digital innovation. I’ve had a look at a few of these solutions.” (Pelle Adolfsson). This indicates that citizens could, through platforms such as Min Stad, potentially be a valuable resource that provides help and input with expertise from their profession on city development. Ideally, a city could gain valuable input from professionals that simply want to help because they have interest in the subject. Potentially even on topics that are outside the core competencies of the city, for instance on new technology such as hydrogen gas.

## 4.3) Understanding why citizens stopped coming back to the platform

#### 4.3.1 Citizens expected feedback and implementation

In order to understand citizens motivations with Expectancy Theory, participants were asked to describe what their expected outcome of the post was. All interviewees expected their post to be read, however whom they expected would read their post differed. For example some interviewees expected the city of Gothenburg to read it, while other interviewees expected other citizens to read it. Additionally, there were two common expected outcomes. The first was participants expecting feedback on their proposal/post in some way and the second was participants expecting their proposal/post to be implemented in the city.

More than half of the participants mentioned that they expected to receive some sort of feedback on their proposal/post, for example in the form of a comment or an e-mail reply. Some participants expected feedback to come from other citizens, such as neighbours in the area or others with similar interest. Other participants expected feedback to come directly from representatives of the city, for example that their proposal would receive an answer from the relevant department in the city as to why it was not feasible to implement. It was mentioned that they preferred having negative feedback, for example their proposal not being able to be implemented, rather than being left unheard. Finally, one participant expected that someone would provide some sort of feedback either through liking or commenting although that participant had not considered who that might be that provided the feedback.

Most participants described that their expected outcome was that their proposal could be implemented in the city through their post. Some of these participants had clear expectations that their post would lead to implementation while others hoped, and believed, there was a chance it was implemented but understood that it may not be implemented. Some participants however, did not have any expectation that their proposal/post would actually reach implementation.

### 4.3.2 Citizens feel disrespected due to lack of feedback

The most common reason for not coming back to contribute more to the platform was due to lack of feedback. Participants that mentioned this had some expectation that they would receive feedback from other citizens or the city and became disappointed when they discovered that no feedback was received. Some examples of this from the interviews were, “But that is simply the reason that I have not kept adding stuff, because I don’t feel respected as a contributor. I don’t feel like what I am giving is received.” (Jonathan Ljung) or “No [I have not used the application since I made my post], I gave up after I did not receive any feedback on my post.” (Pelle Adolfsson). In addition, some participants also described how the platform felt dead when they were browsing it, as they could easily spot that activity on all posts on the platform was very low. An example of this would be, “But it’s also something about the low activity on the platform. You see it instantly, if I just randomly click on this new bridge there there is a blob where it says ‘Mr.Bean was here’. But then nobody has commented, I mean nobody... It’s very short information. This makes me feel like I don’t want to go any further.” (Jonathan Ljung). These participants described that by realizing that others were not using the platform, and that no feedback was provided on other citizens' posts, their own motivation to participate on the platform was weakened. In other words, these citizens became less motivated to continue participating the fewer other users they thought were active on the platform.

In addition to the lack of feedback, a few participants described that they were not able to express themselves properly through Min Stad the way it was currently designed. An example of this was, “I think that very few understand what I am trying to say. Simply because: 1), they cannot find it [my post], 2) they don't really have a way to understand what to do with it or how to use it". (Jonathan Ljung). In general however, most participants felt that using the platform to share suggestions in the city was an easy to use process with a potentially valuable outcome. Interestingly, several citizens described the value of getting feedback as equally valuable compared to getting their proposal implemented. Getting feedback was described as valuable because it would make them feel noticed and having the power to make a difference in their local environment. For example some participants stated the following on how they would feel if their post would reach implementation, "...that would have made me very happy and like, oh wow, could you really make a difference using such an easy method." (Lucas Ekerot) or "I'd be very happy, it would have felt like it was a city that was there for its citizens and developed together with them." (Rickard Knutsson).

# 5. Discussion

In this chapter, the findings of the study are reflected upon and put in relation to both motivation theories and previous studies on the topic of Citizensourcing. Firstly, a discussion on the results in relation to existing theory will be presented. Secondly, the theoretical contribution of this study will be discussed.

## 5.1 Applying work motivation theory to a Citizensourcing setting

As previously stated, studies within motivation theories and Citizensourcing have not been sufficient enough to fully understand what motivates citizens' participation. Therefore, the purpose of this study was to explore the motivations behind citizens' choice to contribute in Citizensourcing initiatives.

### 5.1.1 Both dissatisfiers and motivators drive participation in Citizensourcing

Our findings indicate that both motivators and dissatisfiers play a part in why citizens were motivated to contribute to the Citizensourcing platform Min Stad. The most common motivator proved to be recognition and the most common dissatisfiers proved to be safety and work conditions. These results are interesting because platforms such as Min Stad, where citizens can report issues or suggestions in the city, can in the eyes of a city administration easily be viewed as a traditional issue reporting channel where citizens only report on things that bother them expecting them to be fixed. Although many of the interviewees mention that getting issues fixed were part of their motivation to come to the platform, it was not enough to fully explain their contributions. Participants expect more in terms of getting recognition and feedback from this platform than they might from a traditional error reporting service on a city website.

In terms of studying citizens' motivation to participate on the platform, Herzberg's Hygiene Needs Theory (Herzberg, 1987) proved to be an interesting approach as it showed that people contributed due to both types of needs. However, several of the dissatisfiers that were identified and developed in the theory chapter were not mentioned as drivers behind motivation to come on the platform by any of the participants in this study. For instance, dissatisfiers such as city tax rates and fees and city rules and regulations were not mentioned by any interviewees. Similarly for the motivators, growth, advancement and achievement were not mentioned by any of the interviewees in this study. Despite the lack of complete utilization of Herzberg's Hygiene Needs Theory (Herzberg, 1987), the rationale behind distinguishing between dissatisfiers and motivators proved useful as it showed that citizens' motivations expanded beyond simply complaining. In addition, the theory could prove useful in further studies in Citizensourcing settings as our results indicate that some citizens were motivated by factors similar to those that motivate employees in a workplace environment. For instance, citizens that are motivated by some sort of recognition from the city or other citizens are similar to how employees in a workplace environment could be motivated by recognition from managers or fellow peers. Further studies could seek to expand understanding on the usefulness of the theory in this setting. For instance, Herzberg (1987) describes how catering to dissatisfiers can only serve to make a worker less unmotivated, but not make them truly motivated. In a Citizensourcing setting, it could be the case that catering to the participants motivated by dissatisfiers only serves to make them return when they have a new dissatisfier. However, catering to participants motivated by motivators could lead to encouraging participants to come back to the platform not just when they have something to complain about, but also to share entirely new ideas.

### 5.1.2 Low Instrumentality caused participants to stop contributing

Min Stad has seen a decline in activity in terms of posts for between 2012 - 2020. This is most likely an indication of two factors, 1) citizens or new users are not finding and contributing to the platform or 2) citizens that have posted once are not coming back to the platform to contribute more. Regarding what causes citizens to stop contributing to a Citizensourcing platform such as Min Stad, an interesting finding was that people viewed the platform as a tool for communication, mostly with the city but also with other citizens. This view of Min Stad as a communication platform is likely part of the explanation as to why a majority of the participants expected some sort of feedback on their contributions, and in turn why they felt like their efforts were not leading to anything when this expectation was not met and they did not receive any feedback. To put it bluntly, the platform felt dead in the eyes of the participants and therefore, trying to achieve anything on it felt pointless. This lack of feedback leading to low Instrumentality likely plays a part in explaining the declining activity on the platform from 2012 to 2020. Although citizens expect implementation of their suggestions in addition to the feedback, our results indicate that the value of the feedback is enough to motivate their efforts on the platform even if their suggestions are not implemented. This would also make sense from an Expectancy Theory perspective as Vroom (1964) describes that each outcome should be weighted by Valence and summed. Therefore, if citizens feel that they are likely to receive feedback on their suggestion (high Instrumentality for feedback as an outcome) and the feedback is perceived as valuable (high Valence for feedback as an outcome), that could motivate their efforts even if they do not believe their suggestion will be implemented (low Instrumentality for implementation as an outcome).

Furthermore, our study indicates that both Expectancy and Valence related factors were not as relevant to understanding why citizens were not contributing in the case on Min Stad. Although a few participants mentioned some Expectancy related issues with the platform, participants in general did not feel like it using the platform required too much effort from them or that the value of their desired outcome was too low to bother posting. These results further indicate that the main explanation for the declining activity on the platform was that citizens stopped contributing to the platform primarily due to low Instrumentality. Put differently, this analysis indicates that the main reason participants are not returning to the platform is caused by the lack of feedback, making participants perceive the platform as dead (Instrumentality). As opposed to being caused by issues related to citizens perceived ease of use, functionality and how citizens can express themselves on the platform (Expectancy) or that citizens simply do not care enough about potential outcomes to bother coming back to post more (Valence).

### 5.1.3 Inability to reach critical mass caused citizens to stop contributing

Another vital factor to why citizens stopped contributing was how the platform was perceived. In this case the platform was viewed as dead since not much activity could be seen. This finding is not surprising, as economic theories of platforms highlight positive network effects and reaching critical mass as vital parts in establishing successful platforms, such as described by Eisenmann et al. (2006) and Hinz et al. (2020). Essentially, a successful platform needs to have enough users active for it to become more appealing in other users' eyes. For instance, the value of being on Facebook increases the more friends I have that are also active on Facebook. If no-one else is active on Facebook, the platform is essentially useless. Our results indicate that this dynamic also exists on Min Stad, i.e. that citizens perceive the value of the platform as higher the more other citizens are also active on the platform to provide feedback and new suggestions. Because many of the participants interviewed in this study perceived the platform as dead, the overall usefulness of the platform as a communication tool also felt low. This indicates that one of the causes of the declining activity on the platform between 2012 - 2020, highlighted in the results chapter, could be that the platform has never reached the level of activity from citizens required to sustain critical mass. The platform in its current state could be described as stuck in a negative feedback loop of declining activity, where the lack of feedback leads to lower activity which in turn leads to less feedback that causes even lower activity.

## 5.2 Theoretical contribution

This study adds to existing studies within Citizensourcing such as Schmidthuber et al. (2019) and Thapa et al. (2015) by studying Citizensourcing motivations using Herzberg's Hygiene Needs Theory (Herzberg, 1987) and Vroom's Expectancy Theory (Vroom, 1964), theories that are more commonly used within the field of work motivation. By taking this approach, this study contributes to the topic of Citizensourcing in three ways. Firstly, we have made an attempt in adapting Herzberg's work motivation theory to a Citizensourcing setting and propose the usage of Citizensourcing Two-Factor Motivation to study motivation in this field. Secondly, the results of this study expand on previous work by further highlighting that citizens chose to contribute due to both dissatisfiers and motivators, for example complaining about something in the city being broken and wanting other citizens' recognition, and that personal interest plays a part in explaining citizens' motivation. Finally, the results of this study provides insights on what can cause citizens to feel unmotivated and stop coming back to a Citizensourcing platform.

### 5.2.1 Introducing Citizensourcing Two-Factor Motivation

As previously mentioned, Herzberg's Hygiene Needs Theory (Herzberg, 1987) proved to be an interesting approach to study Min Stad. However, as the theory originates from work motivation its potential could not be fully utilized in the Citizensourcing setting. Therefore, we propose a new framework called the "Citizensourcing Two-Factors Motivation" based on Herzberg's Two Hygiene Needs Theory. An overview of this framework can be seen in Figure 3 below.

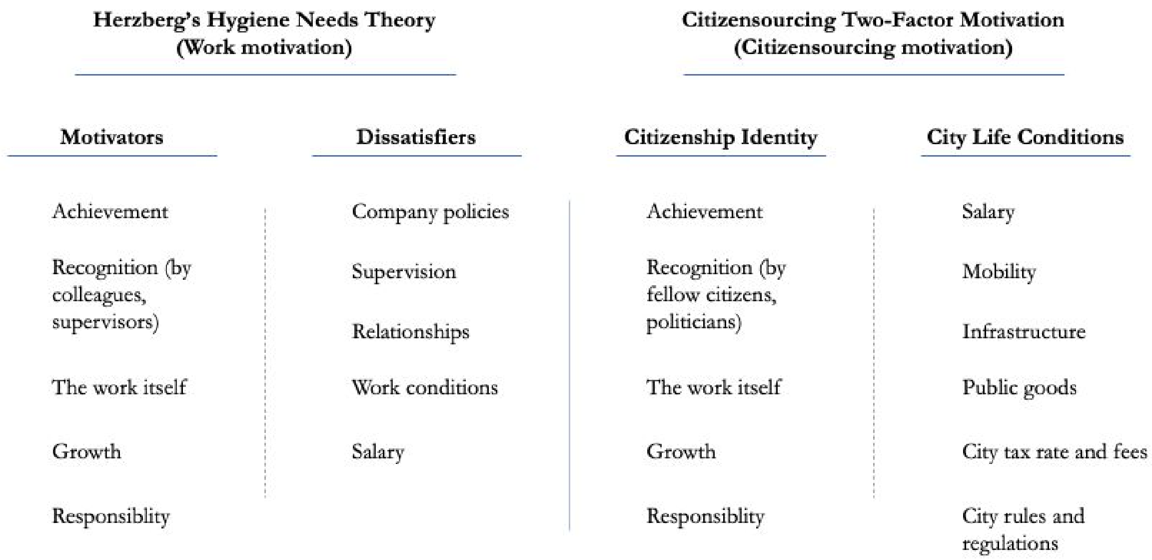


Figure 3. Citizensourcing Two-Factor Motivation compared to Herzberg Hygiene Needs Theory.

To begin with, we propose the introduction of using "City Life Conditions" to replace dissatisfiers when studying motivation in Citizensourcing settings. City Life Conditions refer to the conditions which citizens are exposed to in their city life, outside of their work and home environments. This includes factors such as safety (such as feeling safe on the way home from a bar in the city at night), mobility (such as transportation of any kind within the city), infrastructure (such as public parking spots, lighting) and public goods (access to fresh air, law enforcement). The rationale behind City Life Conditions in Citizensourcing Two-Factor Motivation is similar to the rationale of dissatisfiers in Herzberg's Hygiene Needs Theory. Citizens simply expect these factors to meet their expectations in everyday life and will not become more motivated or happy if these factors are much better than expected. For instance, a citizen cannot be motivated or happy in the city life by having a well-functioning public transportation system, this is rather something to be expected, just as getting a salary for work is expected. However, if one of these City Life Conditions is not working as expected, they can cause a citizen to become very unhappy or unmotivated. An example of this would be that a citizen could be expected to feel very frustrated or unmotivated if public transportation is not working according to expectations, or that a local law on parking is unreasonably strict and disturbing their everyday city life.

Additionally, we propose using "Citizenship Identity" to replace motivators when studying motivation in Citizensourcing settings. Citizenship Identity refers to factors that motivates citizens in a city life setting, outside of their home and work environment and can be thought of as similar to a social identity. In social identity theory, a social identity of an individual is the knowledge that he or she belongs to a social category or group (Hogg & Abrams, 1988). According to this theory, individuals compare and categorize themselves and other individuals as part of, or not part of, a group that holds a common social identification. In the case of Citizenship Identity, this means that individuals see themselves as members of a community and strive to become the best possible member of that community to feel good about themselves and receive status within a group of other citizens. Our results showed that motivators were an interesting perspective to take into consideration in Citizensourcing. However, just as with dissatisfiers the motivators in the Hygiene Needs Theory were not fully applicable to the city life of citizens. Citizenship Identity on the other hand, serves the same purpose as motivators in Herzberg's Hygiene Needs Theory, with the only difference being the adaptation to city life instead of work life. For instance, the motivator "recognition" in Herzberg's theory refers to being recognized by colleagues or supervisors at work, while recognition in the city life refers to being recognized by fellow citizens or politicians. However, it is important to note that not all factors of Citizenship Identity are necessarily inherent to Citizensourcing initiatives, which means that these factors may need to be artificially stimulated from developers of such initiatives. For instance, "achievement" in Citizensourcing settings might not exist in the initial design of a Citizensourcing initiative but could be stimulated by introducing a sort of reward system. Examples of this in the case of digital platforms could be the karma system in the massive online social forum Reddit where users can reward other users by "upvoting" posts they like to make the initial author of the post receive higher status and a sense of achievement on the platform (Reddit, 2020). A more extreme, and perhaps disturbing, example in the case of Citizenship Identity could be China's social credit system (Business Insider, 2018). This system allows states in China to rank all citizens based on their social credit and offer punishment and rewards in their city life based on this. This allows the state to incentivize “good behavior” such as donating to charity while punishing bad behaviour such as smoking in no smoking zones. Although we do not propose a model so extreme as the Chinese one, the concept in itself is interesting. In the case of Min Stad, introducing a ranking system of some sort for citizens that provide relevant suggestions on how to improve the city could provide citizens with a sense of achievement and thus improve their motivation to contribute more.

In conclusion, just as Herzberg’s Hygiene Needs Theory helps us understand employees, we believe that the Citizensourcing Two-Factor Motivation can help us better understand citizens. By thinking in terms of the Citizensoucring Two-Factor Motivation, we believe cities can get a better understanding of what factors could impact their citizens’ motivation to participate in Citizensourcing initiatives.

### 5.2.2 Addition to existing literature on citizen motivation

The indication that motivators play a part in explaining why citizens choose to participate in Citizensourcing further add to support previous studies such as Schmidthuber et al. (2019) and Schmidthuber et al. (2017) which both found that fun and enjoyment are important factors for participation. It also adds to existing theory by showing that Herzberg’s (1987) motivators, such as recognition, could play an important role in explaining citizens' motivation to participate. Recognition being an important motivation would also be inline with previous empirical studies on what motivates individuals to contribute to open source projects in general as opposed to Citizensourcing initiatives specifically. For instance, a study by West & Gallagher (2006) found signaling one’s own capabilities to gain respect from one’s peers as one of three classes of motivation when studying what motivates participation in open source projects.

Our findings in this study indicate that people are partially driven by finding the work itself interesting. While Schmidthuber et al. (2019) found that intrinsic motivations such as fun and enjoyment boosted the quality of participation our study found that this also holds true in terms of why people choose to contribute. Another interesting aspect brought up by Thapa et al. (2015) is that there is a positive correlation between citizens’ expertise and their willingness to participate in Citizensourcing. While our study did not include examining citizens’ levels of expertise, we did find out that citizens with a personal interest, hobby or expertise through profession in the subject of city planning were contributing to Min Stad.

In addition, we also contribute to the literature in Citizensourcing as previous studies such as Schmidthuber et al. (2019) have highlighted the need to study why citizens stop contributing in

Citizensourcing projects. This aspect is important as Citizensourcing aims to establish a new type of relationship between the government and its citizens where, as was described in the introduction through Dameri & Rosenthal-Sabroux (2014), human contribution is a vital part. Therefore, we believe that one-time contributions have to be turned into frequent communication in order for trust and belief to build betweens citizens and the government. In terms of why people stop contributing, our research showed the importance of feedback as well as meeting the citizens' expectation of the platform. Additionally, our results indicated that Instrumentality plays a larger role than Expectancy in explaining why citizens stop contributing to the platform. These results are similar to Schmidthuber et al. (2017), which found that the perceived usefulness of the platform in the eyes of participants was more important than the perceived ease of use. Perceived usefulness is closely related to reaching critical mass and benefiting from network effects that positively affects the perceived usefulness. Essentially, positive network effects can create a positive feedback loop, which accumulates the amount of users and therefore increases the perceived usefulness of the platform. As our results indicate, feedback seems to play a big part in accomplishing and reaching critical mass, specifically when citizens expect to receive feedback.

Furthermore, citizens also mentioned feeling disrespected as a contributor to the platform as no feedback was provided. As mentioned in the introduction, the city of Gothenburg mentions strengthening the brand of the city as one of the key benefits of becoming a Smart City. However, with the current state of Min Stad it seems that the opposite effect is achieved in the eyes of some citizens, i.e. Min Stad is negatively affecting the brand of the city. On a more positive note however, participants also mentioned that if the platform would work according to their expectations, this would positively impact their view of Göteborgs Stad as well as simplifying their everyday lives and making them feel like they could actually participate in the development of their city. This indicates that Min Stad has the potential to achieve at least three of the five key benefits, mentioned in the introduction, of Smart Cities that Gothenburg identifies. These would be: 1) Simplifying everyday life for citizens, visitors and businesses, 2) Becoming a smarter and more open administration that supports innovation and participation and 4) Contributing to the city's brand.

# 6. Implications

Our research provides insights that can be beneficial for practical implications. Firstly, we believe that the view of the platform in the eyes of the city needs to expand beyond a traditional error reporting/complaints channel or graffiti board for citizens. Secondly, we believe the purpose of the platform needs to be clarified in the eyes of the citizens, or that the platform is developed to meet the citizens expectations better. Finally, we believe that growing the platform to reach critical mass is required, and that one approach to growing could be through a beachhead strategy commonly used by other successful digital platforms.

## 6.1 Expand beyond a traditional error reporting and complaints channel

Contrary to what staff at the city of Gothenburg described (that most citizens post due to dissatisfiers), our study shows that citizens contributed both due to motivators and dissatisfiers. A mismatch like this could have negative consequences as it can hold back a lot of the potential of the platform. For instance, if the developers of the platform believe that the main reason participants come on to the platform is to report issues or bring forward complaints, their focus might be to develop a platform that is very good at making issues and complaints go away quickly by solving them. However, this focus might miss the fact that some participants want their suggestions to be visible on the platform so their neighbours can recognize them, thus leading them to be unmotivated if the issue is resolved and disappears from the platform quickly.

Consequently, it all depends on what way the city wants to develop the platform. If the city aims to cater to focus on City Life Conditions, the platform and its functions should be aligned for this purpose. For instance, making it easy to submit and gather error reports from citizens. However, if the purpose of the platform is to facilitate idea sharing and interaction on a wide range of topics, both between citizens themselves or between citizens and the city, a focus on catering to motivators such as recognition and achievement could make more sense. As of now the platform can be described as being in limbo, not having a clear focus on either dissatisfiers such as City Life Conditions or on Citizenship Identity aspects such as interaction and idea sharing, therefore causing confusion among citizens that use the platform.

## 6.2 Clarify the purpose or meet the citizens expectations of the platform

Another finding with practical implications was that almost all participants perceived the primary purpose of the platform to be communicating directly with Göteborgs Stad. Put differently, citizens expected representatives from the city to read and respond to their suggestions through the platform. This perspective from the citizens differed from what the interviewed staff of the platform described the purpose of the platform to be. These findings indicate that there exists a mismatch between how the citizens expect the platform to behave and how the city actually uses the platform. This mismatch could partly explain why several participants mentioned that the purpose of the platform felt unclear after using the platform, and in turn what causes citizens to not contribute or refrain from returning to the platform. Therefore, we identify that one area of improvement could be to clearly communicate the purpose of the platform. By doing this, Göterborgs Stad removes expectations from citizens that cannot be met and therefore reduces the occurrence of false hopes and mistrust in the city. Alternatively, but probably more difficult to implement, the city could adapt the platform to be more of a direct communication platform with the city to better meet the expectations of the citizens. This would then probably include developing functions in the application, and processes within the administration, to actively provide feedback to all suggestions that are received through the platform.

## 6.3 Grow usage through a geographical beachhead strategy

As discussed previously, our results indicate that Min Stad may not have reached critical mass to sustain engagement of citizens over time due to the lack of feedback. To escape this negative feedback loop when developing initiatives such as Min Stad, it could be beneficial to divide the city into smaller areas and focus on reaching critical mass in one smaller area at a time, as opposed to the entire city all at once. The rationale behind this would be that the number of citizens required to reach critical mass would be substantially lower for a portion of the platform, compared to the critical mass required to sustain activity on the entire platform. This would in turn allow the city to spend less to target and attract a subgroup that can reach critical mass and become self-sustaining, as opposed to spending large amounts on marketing towards the entire population of the city. Just as economic theory within entrepreneurship such as Aulet (2013) suggests, it could make sense to start with a niche target group and focusing on that group before developing it further. This approach has led to success stories of some of the biggest platform players such as Facebook and Amazon, where they initially focused on a small target group (Facebook initially only served Harvard students and Amazon only sold books) before expanding to broader audiences. We believe that such an approach would add more value and aid in developing stronger and more active engagement.

In terms of shaping a beachhead strategy to Min Stad, our study indicates that the importance of the topic being close to heart plays a big role when it comes to what citizens post about. Moreover, topics that lie closest to the heart of people are places they visit often, such as being close to home or on the way to work. These results are perhaps not so surprising, as one could expect citizens to have issues related to environments where they spend most of their time on top of mind when thinking about suggestions to make on the platform. Therefore, a reasonable strategy could be to develop initiatives for local communities in each urban district as this could be a way of gaining critical mass and encouraging engagement by people in that area. For instance, the value of the platform for a user living in the area Majorna is likely more dependent on the number of other users in Majorna, as opposed to the total number of users on the entire platform. Based on our results, it seems reasonable to expect this user to appreciate the platform more if there are 100 users active in Majorna, rather than 1 000 users in all of Gothenburg and only 10 of these in Majorna. Therefore, the city administration could start by developing a well functioning platform for people living in Majorna and attempt to reach a critical mass there, before rolling out in neighbouring areas one at a time. This could also help by showing new users of the platform how the service is intended to work by showcasing an area where critical mass has been reached. Another benefit of this strategy could be to, with limited resources, showcase internally within the city administration what can be achieved from the platform if critical mass is reached. Thus creating a "quick win" and sense of achievement that can help motivate staff working on the platform. An alternative approach to going from district to district could be to instead focus on a specific area of interest, such as for instance city development. The approach could then be to achieve a critical mass of users interested in city development who view the platform as the go-to platform for everyone interested in city development in the city. The drawbacks of this approach could however be that the platform struggles to attract "regular citizens" and instead becomes a niche platform for a specific interest group that is difficult to change too much without upsetting the existing user base. In addition, the platform could then also directly compete with existing platforms that exist for that specific interest group, an example would be Yimby (Yimby, 2020) in the case of city development.

# 7. Limitations and further research

This study contains both some limitations and potential avenues for future research. Firstly, our study is limited by the single case study Min Stad created by the city of Gothenburg. Therefore, a suggestion for future research to gather more details could be to use the approach of a multiple case study. Just as Schmidthuber (2019) highlighted, one also has to take into consideration factors such as cultural differences and the general economic climate. Thus, conducting a similar study in a Nordic country would add great value to the work done through this paper.

Furthermore, the primary data retrieved in our study came from interviews conducted with citizens that had contributed to the platform. Contribution displays some sort of interest or experience in the platform which in itself can be susceptible to selection bias. In other words, using other sampling methods could provide additional insights that were not captured in our study. Moreover, our study is limited by the number of participants as only 11 people were interviewed. However, as our study is of qualitative nature and aims to gain deeper understanding, along with the multiple data sources and robust analysis methods, this counterbalances this limitation.

Additionally, our study incorporated motivation theories Herzberg's Hygiene Needs Theory (Herzberg, 1987) and Vroom's Expectancy Theory (Vroom, 1964). The results proved to be somewhat mixed, indicating that motivation theories can be a good way to understand motivations from citizens. However, one might also want to dive deeper into each motivation theory and conduct studies based on the isolation of each theory to get an even better understanding. In the case of Herzberg's theory, we suggest using our proposed Citizensourcing Two-Factor Motivation to study Citizensourcing initiatives to aid the understanding of citizens in their city life.

Finally, we highly encourage and recommend more research within this topic as it is an increasingly relevant area of study. Understanding motivations of citizens is essential in developing cities for the future as it is a value add for public government, citizens and society in large.

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